

Application No. 09/991353
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Reply to Office Action of 23 February 2004

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Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in this application:

1. (Currently Amended) An apparatus for waking an individual in a manner that promotes said individual's well being comprising:
(a) at least one sensor operative to ~~measure~~ sense at least one parameter correlated to said individual's sleep level; and
(b) a controller capable of being set by said individual with a final wakeup time, said controller operative to ~~control an introduction of at least one stimulus~~ connected to receive sensed values of the at least one parameter from the sensor and configured to introduce a stimulus at a stimulus introduction time prior to the final wakeup time and ~~, using said measured parameter to control an intensity of the introduced stimulus based on feedback which comprises the sensed values of the at least one parameter,~~ so as to wake bring said individual gradually out of sleep and to an awake state over a period of time between the stimulus introduction time and the final wakeup time.
2. (Currently Amended) An apparatus according to claim 1, wherein ~~the parameter measured by said sensor is motion and said at least one sensor further comprises at least one of: an ultrasonic motion detector and an infrared motion detector.~~

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3. (Currently Amended) An apparatus according to claim 1, wherein ~~when there is more than one stimulus, the intensity of each stimulus may be independently controlled~~ said controller is configured to independently control an intensity of a plurality of stimuli based on feedback which comprises the sensed values of the at least one parameter.
4. (Cancelled)
5. (Currently Amended) An apparatus according to claim 1, wherein the at least one parameter measured sensed by said sensor is comprises at least one of: motion, brain waves, skin potential, skin resistance, muscle tone, eye movement, heart rate and breathing rate of said individual.
6. (Currently Amended) An apparatus according to claim 1, ~~which further comprises~~ comprising a user interface comprising having an input mechanism operative to receive input from said individual and an output mechanism operative to communicate information to said individual.
7. (Currently Amended) An apparatus according to claim 6, wherein said input mechanism ~~is~~ comprises at least one of: a voice recognition system, a keypad, a touch screen interface, a remote control device and a plurality of buttons and switches.

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8. (Currently Amended) An apparatus according to claim 6, wherein said output mechanism is comprises at least one of: a liquid crystal display, a light emitting diode display, an analog clock display, a plasma screen display, a cathode ray tube display, an audio output device and a plurality of switch and button indicators.
9. (Currently Amended) An apparatus according to claim 6, wherein said input mechanism is operative to receive input information from said individual, the input information comprising related to at least one of: ~~the final wakeup time, the~~ a particular set of stimuli desired, ~~the~~ a desired relative intensity of each stimulus selected, the stimulus introduction time, an actual time, a date, a status as to whether said apparatus is armed, a personal sleep sensitivity level of said individual, a recent sleep history of said individual, an ambient stimulus level in said individual's sleeping environment and a seasonal amount of daylight.
10. (Currently Amended) An apparatus according to claim 6, wherein said output mechanism is operative to communicate information to said individual, the information comprising related to at least one of: ~~the final wakeup time, the~~ a particular set of stimuli desired, ~~the~~ a relative intensity of each stimulus selected, the stimulus introduction time, ~~an actual time, a date, a status as to whether said apparatus is armed,~~ a personal sleep sensitivity level of said individual, a recent sleep history of said individual, an ambient stimulus level in said individual's sleeping environment and a seasonal amount of daylight.

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11. (Currently Amended) An apparatus according to claim 1, wherein the ~~introduced~~ stimulus ~~is~~ comprises at least one of: a heat stimulus, a light stimulus, a sound stimulus, an olfactory stimulus and a tactile stimulus.
12. (Currently Amended) An apparatus for waking an individual in a manner that promotes said individual's well being comprising:
- (a) a detection system operative to measure sense at least one parameter correlated to said individual's sleep level; and
 - (b) a controller capable of being set by said individual with a final wakeup time, said controller operative to ~~control an introduction of~~ connected to receive sensed values of the at least one parameter from the sensor and configured to introduce at least one stimulus at a stimulus introduction time prior to the final wakeup time and ~~, using said measured parameter which is constantly updated,~~ to continuously control an intensity of the ~~introduced~~ stimulus over a period of time between the stimulus introduction and the final wakeup time based on feedback which comprises sensed values of the at least one parameter sensed during the period of time, so as to wake bring said individual gradually out of sleep and to an awake state over said period of time.

13. (Cancelled)

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14. (Currently Amended) A method of waking an individual in a manner that promotes said individual's well being, said method comprising the steps of:
- (a) setting a desired final wakeup time;
 - (b) measuring sensing at least one parameter correlated to said individual's sleep level;
 - (c) introducing at least one stimulus to said individual's sleeping environment at a stimulus introduction time prior to said final wakeup time;
 - (d) using said measured parameter to control controlling an intensity of the introduced stimulus based on feedback which comprises sensed values of the at least one parameter, so as to wake bring said individual gradually out of sleep and to an awake state over a period of time between the stimulus introduction time and the final wakeup time.
15. (Currently Amended) A method according to claim 14, wherein ~~said measuring step further~~ sensing at least one parameter correlated to said individual's sleep level comprises detecting motion using ~~one of: an ultrasonic motion detector and an infrared motion detector of the individual.~~
16. (Currently Amended) A method according to claim 14, wherein ~~when there is more than one stimulus, the intensity of each stimulus may be independently controlled~~ comprising independently controlling a plurality of stimuli based on feedback which comprises sensed values of the at least one parameter.
17. (Cancelled)

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18. (Currently Amended) A method according to claim 14,
~~wherein the parameter measured during said measuring step~~
~~is one of sensing at least one parameter correlated to~~
~~said individual's sleep level comprises sensing at least~~
~~one of: motion, brain waves, skin potential, skin~~
~~resistance, muscle tone, eye movement, heart rate and~~
~~breathing rate of said individual.~~
19. (Currently Amended) A method according to claim 14
~~, which further comprises the step of comprising~~
receiving input information from said individual, said
input information being related to comprising at least
one of: ~~the final wakeup time, the a~~ particular set of
stimuli desired, ~~the a~~ desired relative intensity of each
stimulus selected, the stimulus introduction time, ~~an~~
~~actual time, a date, a status that is one of armed and~~
~~disarmed, a personal sleep sensitivity level of said~~
individual, a recent sleep history of said individual, an
ambient stimulus level in said individual's sleeping
environment and a seasonal amount of daylight.
20. (Currently Amended) A method according to claim 14
~~, which further comprises the step of comprising~~
communicating output information to said individual, said
output information being related to comprising at least
one of: ~~the final wakeup time, the a~~ particular set of
stimuli desired, ~~the a~~ relative intensity of each
stimulus selected, the stimulus introduction time, ~~an~~
~~actual time, a date, a status that is one of armed and~~
~~disarmed, a personal sleep sensitivity level of said~~
individual, a recent sleep history of said individual, an
ambient stimulus level in said individual's sleeping
environment and a seasonal amount of daylight.

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21. (Currently Amended) A method according to claim 14, wherein ~~the stimulus introduced during said introducing step is introducing at least one stimulus to said individual's sleeping environment comprises introducing~~ at least one of: a heat stimulus, a light stimulus, a sound stimulus, an olfactory stimulus and a tactile stimulus.
22. (Currently Amended) A method of waking an individual in a manner that promotes said individual's well being, said method comprising ~~the steps of:~~
- (a) setting a desired final wakeup time;
 - (b) measuring at least one parameter correlated to said individual's sleep level;
 - (c) introducing at least one stimulus to said individual's sleeping environment at a stimulus introduction time prior to said final wakeup time; and
 - (d) ~~using said measured parameter which is constantly updated to continuously control~~ continuously controlling an intensity of the introduced stimulus over a period of time between the stimulus introduction time and the final wakeup time based on feedback which comprises sensed values of the at least one parameter sensed during the period of time, so as to wake bring said individual gradually out of sleep and to an awake state over said period of time.
23. (Cancelled)

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24. (New) An apparatus according to claim 1 wherein the at least one parameter comprises motion of the individual and wherein the controller is configured to control the intensity of the stimulus based on both amplitude and frequency of the motion of the individual.
25. (New) An apparatus according to claim 12 wherein the controller is configured to control the intensity of the stimulus such that the individual reaches the fully woken state at about the final wakeup time.
26. (New) An apparatus according to claim 12 wherein the at least one parameter comprises motion of the individual and wherein the controller is configured to control the intensity of the stimulus based on both amplitude and frequency of the motion of the individual.
27. (New) A method according to claim 14 wherein sensing at least one parameter correlated to said individual's sleep level comprises detecting motion of the individual and wherein controlling the intensity of the stimulus comprises controlling the intensity of the stimulus based on both amplitude and frequency of the motion of the individual.
28. (New) A method according to claim 22 wherein controlling the intensity of the stimulus comprises controlling the intensity of the stimulus such that said individual reaches the fully woken state at about the final wakeup time.

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29. (New) A method according to claim 22 wherein sensing at least one parameter correlated to said individual's sleep level comprises detecting motion of the individual and wherein controlling the intensity of the stimulus comprises controlling the intensity of the stimulus based on both amplitude and frequency of the motion of the individual.